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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/501,482	08/16/2004	Bjorn Paulshus	4566-0107PUS1	2371
2292	7590	11/03/2006	EXAMINER	
BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747			MILLS, DANIEL J	
			ART UNIT	PAPER NUMBER
			3679	

DATE MAILED: 11/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/501,482

Applicant(s)

PAULSHUS, BJORN

Examiner

Daniel J. Mills

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 August 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 1,2,6-13,15 and 16 is/are rejected.
- 7) ☒ Claim(s) 3-5 and 14 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 January 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 8-11, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Daiguji et al. (Daiguji – US 2001/0039686) in view of Williams et al (Williams – 5,525,003), and Shigley & Mischke (5th edition).

Regarding claims 1 and 16, Daiguji discloses an end termination for a tension leg (figure 2), the tension leg being constructed a number strands (4) that constitute the load carrying elements of the tension leg, the strands and each of the strands being constructed of a plurality of rods (see paragraph 0028) the rods being twisted about each other (twisted wire), and the strands terminate near a receiving body (2') having connecting means and a number through-going apertures enclosing the respective strands, wherein each strand is passed through a respective aperture in the receiving body (2') without being fixed therein, and the free end of each strand is fixed to and enclosed by a terminating sleeve (5) having a diameter larger than a corresponding aperture in the receiving body, the terminating sleeve is loosely resting on abutting the receiving body. The embodiment shown in figure 2 does not specifically show that each strand has a free end terminating some distance above the receiving body, however,

Figure 8 shows that this was well known at the time of applicant's invention, and it would have been both inevitable and an obvious matter of design choice at the time of applicant's invention to one skilled in the art to have constructed a fixing structure as disclosed by Daiguji with the fixing plate design as shown in Figure 8 for the purpose of increasing the mass of the anchor.

Daiguji fails to disclose that the rods are composed of non-metallic materials like composite material with embedded strength fibers are twisted (laid) about the longitudinal axis of the tension leg by a predetermined laying length.

Williams teaches the use of a composite fiber cables for their high strength to weight ratio. Accordingly, it would have been obvious at the time of applicant's invention to modify the arrangement of Daiguji to include a composite fiber cable as taught by Williams for the purpose of utilizing strong light composite cable with a high strength to weight ratio.

Shigley & Mischke (S-M) teaches the use of a Lang-lay pattern for resistance to abrasive wear and fatigue failure. Accordingly it would have been obvious at the time of applicant's invention to modify the arrangement of Daiguji in view of Willes to include a Lang-lay pattern for resistance to abrasive wear and fatigue failure.

Regarding claim 8, Daiguji in view of Williams, and S-M results in an end termination comprising an embracing element (see figure 2, the embracing element guides the strands more closely together) that is spaced apart from the receiving body and keeps the strands together, that between the embracing element and the receiving

body the strands extend without radial restriction and in a substantially natural direction towards and into the apertures of the receiving body (as shown in figure 2).

Regarding claim 9, Daiguji in view of Williams, and S-M, results in an end termination wherein the receiving body acts as a gathering element for the strands between the embracing element and the terminating sleeve (see figure 2).

Regarding claim 10, Daiguji in view of Williams, and S-M, results in an end termination wherein the apertures of the receiving body are inclined relative to the longitudinal axis of the tension leg (shown in figure 8) and the inclination corresponds to the natural direction of the strands between the embracing element and the terminating sleeves.

Regarding claim 11, Daiguji in view of Williams, and S-M, results in an end termination further comprising that the end to a termination comprises an external rigid sleeve (1) fixed at one end thereof to the receiving body and in its other end to the embracing element.

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Daiguji et al. (Daiguji – US 2001/0039686), Williams et al (Williams – 5,525,003), Shigley & Mischke (5th edition), as set forth, above, and further in view of Willes (GB 2,091,770).

Regarding claim 2, Daiguji in view of Williams and S-M result in an end termination but fail to show the terminating sleeve is internally tapered in a direction towards the receiving body.

Willes (GB 2,091,770) teaches the use of a composite fiber strand rope and internally tapered end termination because the combination of the high-modulus plastic

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fiber rope and end termination is able to withstand high tensile loading forces with low weight. Accordingly, it would have been obvious at the time of applicant's invention to modify the arrangement of Daiguji, Williams, and S-M to include a composite rope and end termination as taught by Willes for the purpose of utilizing strong light composite plastic fiber rope that minimizes weight and maximizes load carrying capacity.

Claims 12, 13, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Daiguji et al. (Daiguji – US 2001/0039686) in view of Williams et al. (Williams – US 5,525,003) and Shigley & Mischke (5th edition) as set forth in claims 1-5, 8-11, above, and further in view of Dufosse (US 3,967,421).

Regarding claim 12, Daiguji in view of Williams and S-M disclose an end termination as claimed but fail to disclose that the receiving body on its external surface has at least one annular groove for engagement with at least one first annular rib on a connecting part that is connected to a connecting point.

Dufosse teaches the use of a receiving body (6) that on its external surface has at least one annular groove (threading) for engagement with at least one first annular rib (threading on 8) on a connecting part (8) that is connected to a connecting point (at 9), for the purpose of allowing an adjustment of length of the end termination to adjust tension in the cable. Accordingly it would have been obvious at the time of applicant's invention, to modify the arrangement of Daiguji in view of Willes and S-M to include a receiving body that on its external surface has at least one annular groove for engagement with at least one first annular rib on a connecting part that is connected to

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a connecting point as taught by Dufossez for the purpose of allowing an adjustment of end termination length.

Regarding claim 13, Daiguji in view of Williams and S-M and Dufossez results in an end termination characterized in that the connecting point (at 9, Dufossez) has at least one external annular groove (threading on 8, Dufossez) for engagement with at least one second annular rib (on 9, Dufossez) arranged on the connecting part a distance apart from the at least one first rib (at the connection of 8 and 6, Dufossez), which connecting part (9, Dufossez) is radially fixed by an upper (26) and lower (10) embracing connecting part.

Regarding claim 15, Daiguji in view of Williams and S-M and Dufossez results in an end termination characterized in that the connecting parts comprise respective pin screws (shown in Daiguji Figure 2), for temporary fixation of the connecting parts to the connecting point and the receiving body respectively.

Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Daiguji et al. (Daiguji – US 2001/0039686) in view of Williams (US 5,525,003) and Shigley & Mischke (5th edition) as set forth above, and further in view of Alznauer et al. (Alznauer – US 2002/0121390).

Regarding claims 6 and 7, Daiguji in view of Williams and S-M disclose an end termination as claimed but fails to disclose that each aperture through the receiving body terminates in a concentric recess for receipt of and to act as a guide and seat for the terminating sleeve, and that each recess has a depth that is longer than the distance that a terminating sleeve is able to move out of the receiving body.

Alznauer teaches the use of a bushing (11) that guides a cable (5) in an aperture (through which 11 passes) through a receiving body (1) and terminates in a concentric recess (the opening encompassed by 1) for receipt of and to act as a guide and seat for the terminating sleeve (11), and that each recess has a depth that is longer (the height of 1) than the distance that a terminating sleeve is able to move out of the receiving body. Alznauer teaches the use of this bushing to protect the cable. Accordingly it would have been obvious at the time of applicant's invention to modify the arrangement of Daiguji in view of Williams and S-M to include a bushing as taught by Alznauer for the purpose of protecting the cable.

Allowable Subject Matter

Claims 3, 4, 5, and 14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 3, 4, and 5 would be allowable because the prior art fails to disclose or suggest an end termination means with a guiding sleeve which is a separate element from the receiving body, in combination with all other limitations.

Regarding claim 14, the prior art does not disclose or suggest an upper and lower radially outer surface on the connecting part has an upward directed conical form and an upper and lower inner surface on the respective embracing connecting parts has complementary conical form.

Response to Arguments

Applicant's arguments filed 8/9/2006 have been fully considered but they are not persuasive.

Applicant argues that Daiguji fails to teach the prior art shown in Figure 8 in Daiguji and that the examiner attempts to combine unrelated components. This is not persuasive, the examiner intended in setting forth the 103 to establish that the structure as claimed was known at the time of applicant's invention. Examiner notes that Figure 8 can be relied upon separately from all other teachings of Daiguji (but in combination with the other 103 references) to reject claims 1 and 16, therefore applicant's arguments directed to the patentability of claims 1 and 16 are misdirected. The obvious combination of the fixing plate shown in Figure 8 with the end termination as shown in Figure 2 was intended to address certain limitations of dependent claims, and as such, the rejection has been clarified to this end. In light of the disclosure of Daiguji, it is clear that the elements claimed were known before the applicant's invention.

In response to applicant's argument that it would not be obvious to modify Daiguji to include fiber composite cables because the manner of attaching the press fixing grip 5 to the cable would damage the cable, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel J. Mills whose telephone number is 571-272-8115. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel P. Stodola can be reached on 571-272-7087. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



DJM
10/26/2006



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